REMARKS/ARGUMENTS

I. Status of Claims

Prior to the Amendment, claims 1-28 are pending of which claims 1, 7, 12, 17 and 23 are independent.

By this Amendment, claims 1, 7, 12, 13, 16-18, 23-25 and 28 have been amended, and claims 2-6, 8-11 and 19-22 have been canceled without prejudice to or disclaimer of the subject matter recited therein.

II. Rejections under 35 U.S.C. §102(e)

Claims 1 – 28 are rejected under 35 U.S.C. §102 (e) as being anticipated by U.S. Patent Publication No. 2003/0221016 to Jouppi et al., (hereinafter Jouppi). Applicant respectfully traverses the rejection for the reasons stated below.

Before discussing the differences between the cited reference and the present application, it is believed to be beneficial to first give a brief overview of Applicant's disclosure. In a mobile communication system, such as Universal Mobile Telecommunication System (UMTS), Traffic Flow Templates (TFTs) are used to conduct packet filtering operations in connection with secondary Packet Data Protocol (PDP) context. One of the filtering criteria that a TFT packet filter may include is the source IP address of an incoming packet. An IP address can be classified into an IPv4 address, which is of 32-bits in length, and an IPv6 address, which is of 128-bits in length. For a mobile communication system capable of communicating with both an IPv4 network (a network that uses an IPv4 address) and an IPv6 network (a network that uses and IPv6 address), it usually uses an IPv4-embedded IPv6 address, which is a 128-bit IPv6 address that embeds a 32-bit IPv4 address.

However, when a TFT uses an IPv4-embedded IPv6 address as a filtering criterion against incoming packet that has a source address IP in IPv4-embedded IPv6 address form, 128-bit computations are inevitable during the filtering process, and

thus cause a significant load in terms of bit computation as compared with the IPv4 address expressed as 32 bits. The load ultimately degrades the performance of TFT packet filtering.

The method and apparatus disclosed in the present application is designed to solve the above-mentioned system load problem caused by the 128-bit computation conducted against IPv4-embedded IPv6 address during the packet filtering process.

Claim 1

Claim 1 recites a method for performing Traffic Flow Template (TFT) filtering according to Internet Protocol (IP) versions in a mobile communication system, the method comprising the steps of:

> extracting a first IP version address from a source second IP version address, wherein the second IP version address contains the first IP version address; and
>
> generating TFT information using the first IP version address, wherein the TFT information contains an indication that the second IP version address contains the first IP version address; and
>
> transmitting the TFT information to a Gateway GPRS (General Packet Radio Service) Support Node (GGSN).

Jouppi, the cited reference, also relates to TFTs, packet filtering and handling of an IPv6 address. Jouppi, nonetheless, is directed to solve <u>an entirely different problem</u> associated with packet filtering. Specifically, Jouppi is directed to a method and apparatus for avoiding the **inherent security risks** that associate with a globally unique 64-bit prefix of a 128-bit IPv6 address allocated to the primary PDP context associated with a mobile station.

Specifically, according to Jouppi, it has been suggested for the UMTS system that in order to support the auto-configuration mechanism of a stateless IPv6 class, a globally unique 64-bit prefix be allocated to the primary PDP context, in which case the GGSN would use this prefix when transmitting packets from external networks to mobile stations of the UMTS network. This means that all packets having a prefix allocated to a certain mobile station as the destination IP address are transmitted to the mobile station. As for the remaining 64-bit suffix of a 128-bit IPv6 address, it usually comprises an interface identifier that GGSN provides. Nonetheless, the mobile station does not have to use the interface identifier that GGSN provides. This arrangement, however, involves a security risk, because attackers can transmit packets by using random interface identifiers. Given the suffix is 64 bits long, detecting the attack automatically is virtually impossible. See paragraph [0004] of Jouppi.

As can be observed, the **security problem** that Jouppi's scheme seeks to solve is <u>entirely different from</u> the **load problem** that the claimed subject matter seeks to resolve. To be more specific, the **security problem** of Jouppi is caused by the 64-bit prefix of an IPv6 address allocated to a mobile station, whereas the **load problem** is caused by the 128-bit computation conducted against IPv4-embedded IPv6 addresess during the packet filtering process. Hence, Jouppi's approach as disclosed does not disclose, teach, or suggest the claimed step of <u>extracting a first IP version address from a source second IP version address, wherein the second IP version address contains the first IP version address</u>, which is designed to ultimately let GGSN avoid the more expensive type of computations, for example, 128-bit computations, and instead replace them by the much more efficient type of computations, for example, 32-bit computations.

The Examiner, however, cites paragraph [0039], lines 11-12, paragraph [0040], lines 1-6 and paragraph [0009], lines 1-4 as disclosing the claimed step of <u>extracting a first IP version address from a source second IP version address</u>. Applicant respectfully disagrees with the Examiner's understanding.

The text of paragraph [0039], lines 11-12 and paragraph [0040], lines 1-6 merely recites the possible TFT filter parameters, such as source IP address, source gate, and etc. Similar, the text of paragraph [0009], lines 1-4 merely discloses that the interface identifiers, which are allocated within the 64-bit suffix of an IPv6 address, are **observed** in a wireless terminal. None of the three excerpts has anything to do with extracting **a first IP version address** from **a source second IP version address**. Specifically, the interface identifiers as disclosed, however, are not IP-version-based information, since the interface identifiers, by definition, are unrelated to an **IP-version**, which, for example, is relevant to IPv4 or IPv6. Accordingly, the excerpts cited by the Examiner does not disclose, teach, or suggest the claimed step of <u>extracting a first IP version address from a source second IP version address, wherein the second IP version address contains the first IP version address</u>.

It is worth noting that because Jouppi's scheme does not involve the step of <u>extracting a first IP version address from a source second IP version address</u>, Jouppi's system should suffer exactly the same **load problem** as any other conventional UMTS system when filtering against IPv4-embedded IPv6 addresses. This is because Jouppi's scheme, which involves <u>forming a filter, comprising at least part of the interface identifier allocated in the terminal device, so as to guide mapping of data flows of the first subsystem to data flows of the second subsystem</u>, simply has no relevance to correcting the above-mentioned **load problem** caused by the excessive 128-bit computations conducted against IPv4-embedded IPv6 addresses in the packet filtering process.

Further, because Jouppi's scheme has no relevance to handling **IP version addresses**, Jouppi also fails to disclose, teach, or suggest the claimed step of <u>generating TFT information using the first IP version address, wherein the TFT information contains an indication that the second IP version address contains the first IP version address</u>.

To summarize, Jouppi fails to disclose the feature of preventing the system from being loaded by using the first number of bits corresponding to a first IP version (e.g., 32 bits), and not the second number of bits corresponding to a second IP version (e.g., 128 bits), for performing the TFT packet filtering. As set forth in claim 1, the presently claimed subject matter embodies the features of <u>extracting a first IP version address from a source second IP version address, wherein the second IP version address contains the first IP version address</u>, and <u>generating TFT information using the first IP version address, wherein the TFT information contains an indication that the second IP version address contains the first IP version address</u>, neither of which is disclosed, taught, or suggested in Jouppi.

Accordingly, since Jouppi, which has no application the problem that the claimed subject matter seeks to resolve, does not disclose, teach, or suggest each and every limitation of the claimed subject matter, the anticipatory rejection of claim 1 under 35 U.S.C. 102 should therefore be withdrawn.

<u>Claims 7, 17 and 23</u>

Claims 7, 17 and 23 all contains similar recitations to "<u>generating TFT information using the first IP version address, wherein the TFT information contains an indication that the second IP version address contains the first IP version address</u>". As discussed above in connection with claim 1, Jouppi does not disclose, teach, or suggest the subject matter quoted immediately above. Accordingly, for at least the same reasons stated above in connection with claim 1, claims 7, 17 and 23 should also be allowable over Jouppi. The anticipatory rejection of claims 7, 17 and 23 under 35 U.S.C. 102 should therefore be withdrawn.

<u>Claims 12, 13-16, 18 and 24-28</u>

The rejection of claims 12, 13-16, 18 and 24-28 should also be withdrawn by virtue of their dependency from one or more allowable claims 1, 7, 17 and 23 respectively.

III. Conclusion

In view of the above, it is believed that this application is in condition for allowance and notice to this effect is respectfully requested. Should the Examiner have any questions, the Examiner is invited to contact the undersigned at the telephone number indicated below.

Should **any/additional** fees be required, the Director is hereby authorized to charge the fees to Deposit Account No. 18-2220.

Respectfully submitted,

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